National Weather Service

http://weather.gov/louisville

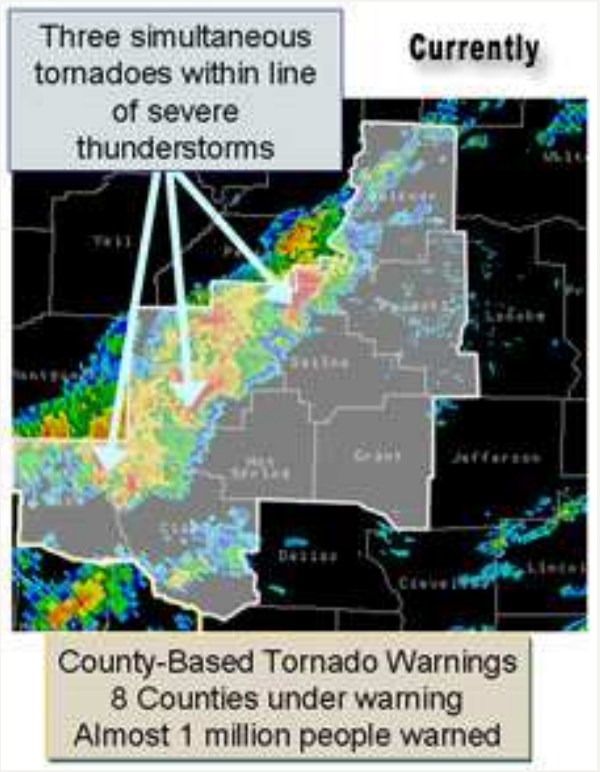
Eye on the Sky

FALL/WINTER 2007/2008

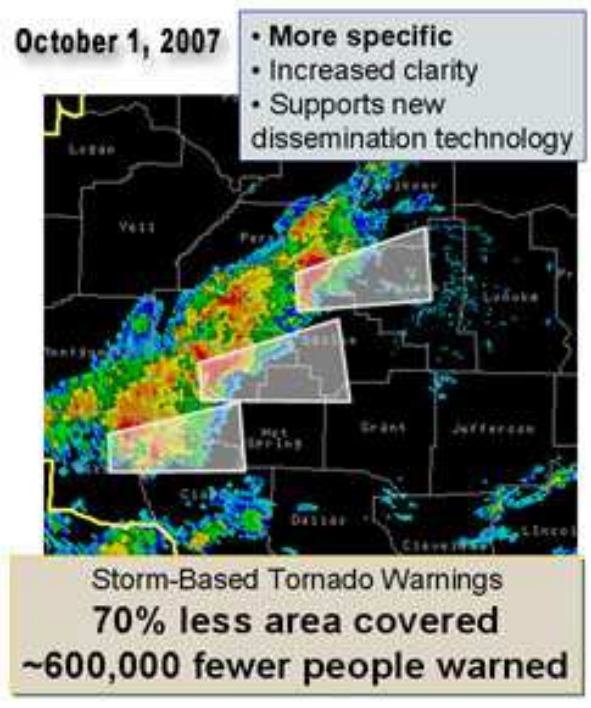
VOLUME 8, ISSUE 2

Storm-Based Warnings

Beginning on October 1, 2007, the National Weather Service will begin issuing "storm based warnings" for tornadoes, severe thunderstorms, and flash floods. Currently, warnings are issued based on counties. With storm based warnings, the NWS will specify areas within a county and refer to commonly known landmarks such as highways or rivers.



Storm based warnings will show the specific meteorological threat area and will not be confined by political boundaries. By focusing only on the areas that are truly threatened by the storm, warning polygons have the potential to improve NWS warning quality.



Storm based warnings will promote improved graphical warning displays, and

...see "Storm Based Warnings" on page two

INSIDE THIS ISSUE:

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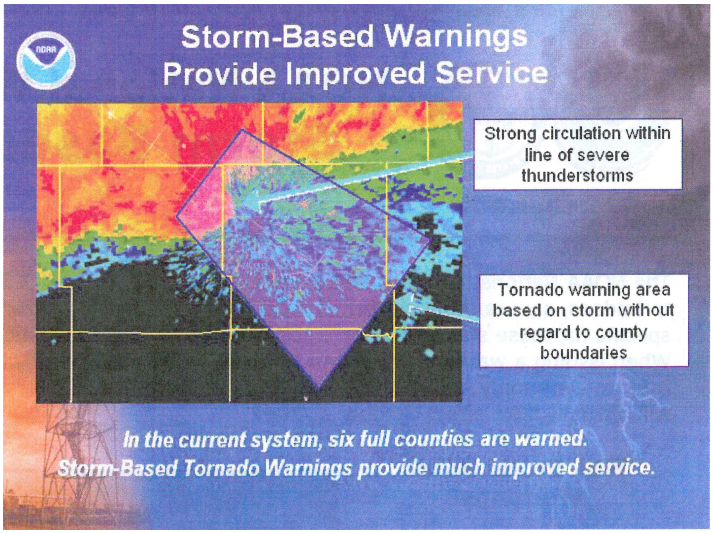
...*Storm Based Warnings,* *continued from page one*

support a wider distribution through cell phone alerts, pagers, and PDAs. The media will be able to display the polygons showing the public where the true threat is, and who is at the greatest risk.

The typical storm based warning is expected to be smaller in size than that of a county-based warning. The resulting economic value to the public due to the reduced cost of sheltering will be at least $100 million per year. Emergency Managers will be able to make better decisions concerning resource allocation. Law enforcement and fire departments will know exactly which areas need to be put on alert. Schools and businesses can more accurately determine whether they will or will not need to activate their tornado procedures and close down operations. Airport operators will be able to better ascertain whether or not they need to suspend air traffic at an airport.



Instead of issuing warnings by county, NWS meteorologists can now narrow their focus to the geographical area that is most threatened by the severe weather. The warned area is defined by latitude/longitude pairs and depicted graphically by polygons.

For audio broadcasts, such as on NOAA Weather Radio, portions of counties are described (northeast, southwest, etc.) and familiar landmarks such as highways or rivers are used.

If a storm moves out of the warning polygon or a new storm develops outside of the warning polygon, a new warning must be issued.

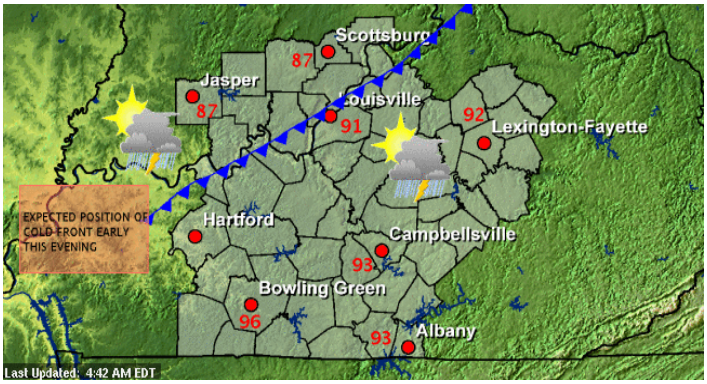
The advent of digital technology has revolutionized communication. This new method of crafting severe weather warnings meshes well with technologies such as Graphical Information Systems (GIS).

If you have any questions or comments about the new storm based warning philosophy, please contact Warning Coordination Meteorologist Joe Sullivan at joe.sullivan@noaa.gov.

THE...ECONOMIC VALUE TO THE PUBLIC DUE TO THE REDUCED COST OF SHELTERING WILL BE AT LEAST $100 MILLION DOLLARS PER YEAR.

Graphicast

The Graphical Weather Story of the Day, or "Graphicast," is a pictorial representation that depicts the most important weather feature in the forecast area of responsibility of individual NWS offices.



Forecasters may include frontal positions, temperatures, chances of precipitation, or any other meteorological variable that is of particular significance on a given day. The idea is to show a "snapshot" of the most important aspects of the forecast, giving customers weather information at a glance.

The Graphicast can be viewed by clicking on the "Weather Story" link at the top of our homepage.

THE GRAPHICAST SHOWS A SNAPSHOT OF THE MOST IMPORTANT ASPECTS OF THE FORECAST, GIVING CUSTOMERS WEATHER INFORMATION AT A GLANCE.

Report NOAA Weather Radio Problems

The Louisville NWS office has installed a new phone line for the public to report problems or concerns with our NOAA Weather Radio (NWR) broadcasts. On this new phone line customers will be able to leave messages for the NWS staff to let us know about any issues.

For example, if the hourly temperatures are missing from the broadcast cycle or if the tone alert function did not work properly for a watch, warning, or weekly test, NWS staff can be notified.

The new NWR phone line will be monitored continuously, and all messages will be heard and addressed.

The number to report problems with NOAA Weather Radio is (502) 968-6194.

If you have any questions regarding this new service, please contact NWS Louisville during regular business hours at (502) 969-8842.

NWS LOUISVILLE HAS A NEW PHONE LINE DEDICATED TO RECEIVE YOUR REPORTS OF NOAA WEATHER RADIO PROBLEMS.

NeWS

Morgan Barry was selected to participate in the Student Temporary Employment Program (STEP). Morgan graduated with a B.S. in Meteorology from Ball State University. She is currently in graduate school at Florida State University. This past summer, Morgan shadowed NWS Louisville meteorologists, and specialized in GIS applications.

Winter Weather Safety


Richmond, Kentucky, February 2, 2007


Southern Kentucky, February 4, 2007

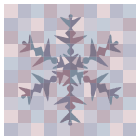

Richmond, Kentucky, April 6, 2007

AVOID OVEREXERTION AND EXPOSURE. SHOVELING HEAVY SNOW CAN BRING ON A HEART ATTACK!

- Check battery powered equipment before the storm arrives. A portable radio or television set may be your only contact with the outside world.
- Check your stock of food and supplies. Your supply should include food that requires no cooking or refrigeration in case of power failure.
- Stay indoors during storms or extreme cold. If you must go out, avoid overexertion.
- Do not overexert while shoveling snow. It can bring on a heart attack, a major cause of death during and after winter storms.


Bowling Green, Kentucky, February 2, 2007

- Plan travel carefully and select primary and alternate routes.
- Check the latest weather information.
- Try not to travel alone.
- Always fill your gas tank before entering open country, even for a short distance.
- A suggested winter storm car kit includes blankets or sleeping bags, matches, candles, empty coffee can with plastic lid (for melting snow to provide drinking water), facial tissue, paper towels, extra clothing, high calorie nonperishable food, compass, shovel, sand, flashlight, windshield scraper, and booster cables.



- When taking a trip during dangerous weather or slick road conditions, be sure to have a charged cell phone with you so you can call for help if necessary.
- Stay in your vehicle. Do not attempt to walk in a blizzard. Disorientation comes quickly in snow. You are more likely to be found in your car.
- Run the motor and heater sparingly, and only with the downwind window cracked open for ventilation. Make sure the tailpipe is unobstructed!
- Exercise by clapping hands and moving arms and legs. Do not stay in one position for long.
- Turn on the dome light at night. It can make your vehicle visible to work crews.

The Data Bank

By Don Kirkpatrick
Senior Meteorologist

With the approach of the fall and winter seasons, we will see a steady downturn in temperature and more widespread precipitation events, some of which will be of the freezing or frozen variety.

Forecasting precipitation type and resulting accumulations are the greatest challenges a meteorologist faces during the cool season. Freezing rain may fall with surface temperatures well below 32 degrees while snow can occur with the thermometer well above freezing.

How warm is too warm for snow? One answer may be "When the air temperature rises above freezing." It is true that snow is melting to some degree in this air but some of our snow occurs with temperatures in the middle 30s or even warmer.

For falling snowflakes to survive in above freezing air near the ground, the relative humidity (RH) must be less than 100 percent, i.e., the air must be unsaturated and the wet-bulb temperature (the lowest temperature that can be attained by evaporating water into the air) must be at freezing or below. When rain falls into a layer of dry air with a low wet-bulb temperature, rapid evaporation and cooling occur which may change the rain to snow. This same type of cooling allows snowflakes to endure with above freezing (melting) temperatures. However, to form snow in the first place, the temperature in the clouds must be below freezing.

During the winter, especially in January, cold, dry arctic air masses can overspread the lower Ohio Valley with dew point temperatures (the temperature to which air must be cooled for saturation to occur, i.e., where RH is 100 percent) in the teens or single digits. In advance of storm systems, both temperature and dew point usually climb as moist, warm air advection increases. Snow may begin falling from a sub-freezing cloud layer with surface air temperatures in the upper 30s and dew points in the upper teens resulting in a wet-bulb temperature around 32 degrees. Snow falling from the clouds into an unsaturated, above freezing layer below begins to partially melt. However, in the dry air, the water quickly evaporates, cooling the air. In addition, evaporation cools the falling snowflake to the wet-bulb temperature, which slows its rate of melting. As snow continues to fall, evaporative cooling results in a continued decrease in temperature while the addition of water vapor into the air increases the dew point. The wet-bulb temperature remains essentially unchanged. Ultimately, the entire layer of air cools to the wet-bulb temperature and becomes saturated at 32°F. The precipitation remains in the form of snow in the absence of warm air advection.

So when is it too warm to snow? Snow would be extremely unlikely at the surface with air temperatures greater than 45°F. The air would have to be very dry, i.e., dewpoints

...see "The Data Bank" on page six

Forecasting precipitation type and resulting accumulations are the greatest challenges a meteorologist faces during the cool season.

2007 Drought

Drought had firmly established itself in the southeastern United States by late spring 2007, and began swelling northward during the early summer. By mid-June, southern Kentucky had entered a severe drought with precipitation deficits since January 1 on the order of 8 inches.

The severe drought conditions continued to spread northward, and all of central Kentucky felt the effects by the end of June. Nelson and LaRue counties were the driest spots in central Kentucky during June, having received only 15% of their normal rainfall. The Commonwealth issued a Water Shortage Watch for 61 central Kentucky counties. Burn bans went into effect and the Green River ferry in Mammoth Cave National Park discontinued service because of low water levels. A few counties imposed water restrictions on residents.

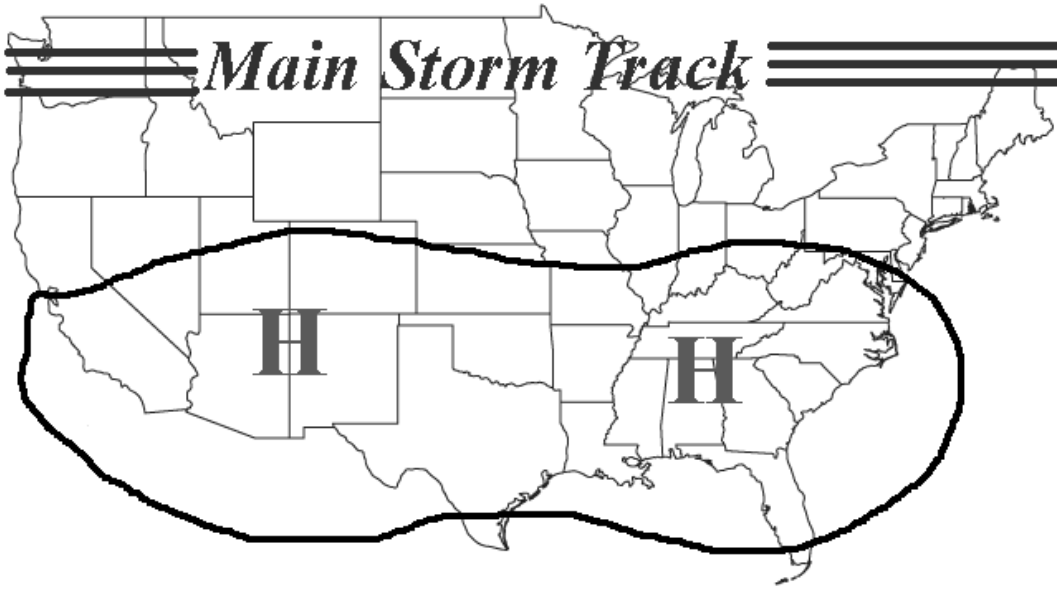
Scattered rains in July put a dent in the drought over much of central Kentucky, though the severe drought continued unabated over the south.

Then came August.

...see "Drought" on page seven

NELSON AND LARUE COUNTIES WERE THE DRIEST SPOTS IN CENTRAL KENTUCKY DURING JUNE, HAVING RECEIVED ONLY 15% OF THEIR NORMAL RAINFALL.

Below: The set-up that gave us our hot, dry August this year

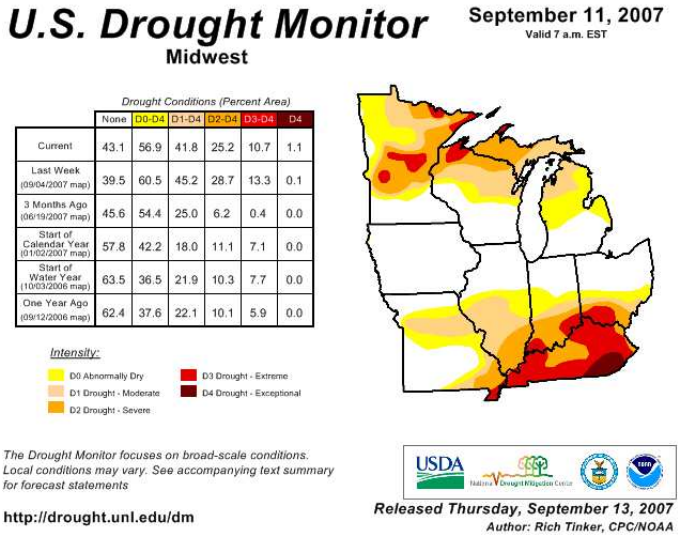


...The Data Bank, *continued from page 5*

around -10°F to yield a wet bulb temperature around 32°F. These conditions before the onset of precipitation would be rare. The highest air temperature possible with a freezing or below wet-bulb temperature would be about 50. However, in very rare circumstances, snowflakes might be possible at the surface with temperatures greater than 50 if swept rapidly toward the ground in a cold, dry thunderstorm downdraft.

...Drought, *continued from page 6*

Searing heat baked Kentucky and southern Indiana, creating significant stress on agricultural concerns and water supplies. Temperatures soaring into the 90s nearly every day and over 100 degrees on several occasions, combined with continued low overall rainfall amounts, locked the region firmly in drought. By the third week of the month roughly the southern half of Kentucky had descended into extreme drought, with severe drought conditions crossing the Ohio River into southern Indiana.



People from Logan County to Nelson County to Casey County were about sixteen inches below normal for rainfall since the beginning of the year.

Below: Dry, cracked ground near Harrodsburg, Kentucky

The Tennessee Valley authority placed a fuel surcharge of $3 to $6 per month per customer on electricity.

The number of wildfires in Kentucky increased 500% over the previous summer.

In southern Kentucky, soil moisture was about half of what it should have been, and seventeen counties became eligible for federal aid. The Barren River at Bowling Green was at its lowest point since the Barren River Dam was built in 1963.

As of mid-September, long-range forecasts were not indicating any unusually wet weather to break the drought.

THE NUMBER OF WILDFIRES IN KENTUCKY INCREASED 500% OVER THE PREVIOUS SUMMER.

INTERESTINGLY, THE OFFICIAL OBSERVING SITE AT LEXINGTON RECEIVED NEAR NORMAL RAINFALL OVER THE SUMMER...WHILE THE REST OF THE BLUE GRASS REGION WAS VERY DRY.

Records Set During August 2007

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	**Left: Greensburg, Kentucky on August 16**		1	2	3	4
5 Bowling Green 76°, new record warm minimum.	6 Louisville 80°, new record warm minimum.	7 Louisville 101°, new record high, and 81°, new record warm minimum. Lexington 97°, tied record high, and 75°, tied record warm minimum.	8 Louisville 102°, tied record high, and 81°, new record warm minimum. Bowling Green 77°, new record warm minimum.	9 Louisville 102°, new record high, and 82°, new record warm minimum. Lexington 77°, new record warm minimum.	10 Bowling Green 78°, new record warm minimum.	11
12	13 Louisville 99°, new record high.	14	15 Louisville 103°, new record high. Lexington 101°, new record high. Bowling Green 104°, new record high.	16 Louisville 105°, new record high (tied all-time record for August). Lexington 102°, new record high. Bowling Green 106°, new record high.	17	18
19	20 Louisville's 22nd 90° day in a row...a new record for consecutive 90° days.	21 Lexington 2.26" of rain, new record daily rainfall.	22 Bowling Green 102°, new record high.	23 Louisville 99°, new record high. Lexington 97°, new record high, and 74°, tied record warm minimum. Bowling Green 102°, new record high.	24 Bowling Green 103°, new record high.	25
26	27	28	29	30	31	

Hottest month ever recorded at Louisville and Bowling Green...3rd hottest month ever recorded at Lexington.

Spring and Summer Severe Weather in 2007

Number of Warnings Issued by NWS Louisville:

Tornado Warnings: 7

Severe Thunderstorm Warnings: 275

Flash Flood Warnings: 16

Busiest Days:

Tornado Warnings: April 3, with 5

Severe Thunderstorm Warnings: April 3, with 65

Flash Flood Warnings: May 11, with 3

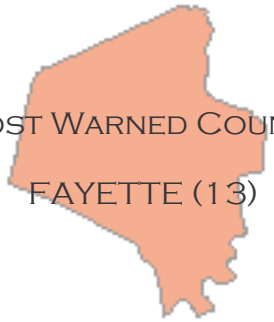
Biggest Hail: 4.25" (softball size) on April 3 near Priceville in Hart County

Fastest Wind: 81 mph on April 3 near Frankfort and on June 24 in Adairville (Logan County)

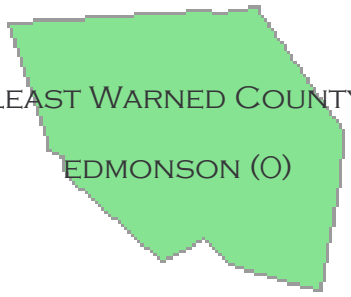
Costliest Single Storm: $300,000 damage done to the marina at Green River Lake in Taylor County on April 3.

There was one **fatality** when lightning struck and killed a man in Nicholasville (Jessamine County) on May 2.

There were two **tornadoes**, both on April 3. An EF0 struck Taylor County northeast of Campbellsville, and an EF1 hit Casey County between Dunnville and Mintonville.



Most Warned County: Fayette (13)



Least Warned County: Edmonson (0)

Above and Below: Big hail in Hart County on April 3, 2007

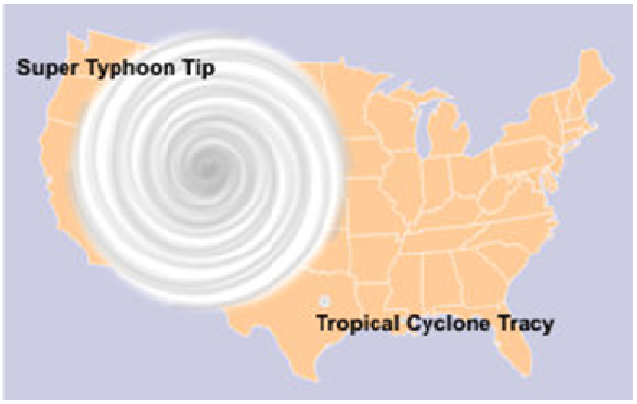
TROPICAL STORMS HAVE WINDS OF 39 TO 73 MPH. HURRICANES AND TYPHOONS HAVE WINDS OF 74 MPH OR GREATER.

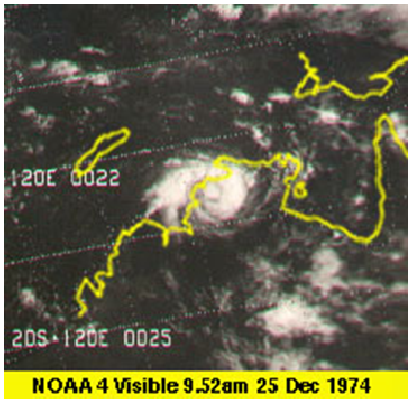
SUPER TYPHOON TIP HAD A DIAMETER OF 1,350 MILES AND PEAK WINDS OF 190 MPH.

Nine Notable Hurricanes

By John Denman
Meteorologist

The largest hurricane. One measure of the size of a hurricane is the radius of tropical storm force winds. Super Typhoon Tip, which formed in the western Pacific in the fall of 1979, was not only the biggest hurricane ever recorded, but also the strongest, with the lowest barometric pressure ever measured at 870mb (25.69 in Hg). At its maximum size, the storm had a diameter of 1,350 miles with peak winds of 190 mph.





The smallest hurricane. Typhoon Tracy, which made landfall over the town of Darwin, Australia, was the smallest hurricane in recent times. With a diameter of only 60 miles, this storm had a width similar to the distance between Louisville and Lexington. Amazingly, this storm was a category 3 hurricane with wind speeds of over 120 mph. It devastated Darwin on December 24, 1974. The image above and to the left is a size comparison of Typhoons Tip and Tracy. The satellite image to the right shows Tracy just after landfall across the northern coast of Australia.

South Atlantic hurricane. Hurricanes usually do not form in the South Atlantic. Generally unfavorable upper level winds, relatively cool ocean temperatures, and the lack of an ITCZ (Inter-Tropical Convergence Zone) greatly inhibit the formation of tropical depressions. On March 27, 2004, however, Hurricane Catarina formed off the coast of Brazil. This storm became the only known southern Atlantic hurricane in the modern era. Eventually, this hurricane reached Category 2, hitting the Brazilian state of Catarina with 100 mph winds. To the left is an image of Catarina, taken just before hitting the Brazilian coast. Note the clockwise rotation, opposite of that found in the Northern Hemisphere.

...see "Nine Notable Hurricanes" on page eleven

...Nine Notable Hurricanes, *continued from page ten*

Closest to the Equator. Tropical storms do not form right on the Equator. The Coriolis Force, which deflects winds to the right in the Northern Hemisphere, is essential for the formation and maintenance of a tropical system. Typhoon Vamei, which formed in the southern China Sea east of Singapore on December 26, 2001, set the record for hurricane formation closest to the Equator. It formed at 1.4 degrees north, only 104 miles north of the Equator. This storm, which later hit Singapore as a category one typhoon, didn't need the Coriolis Force to form; it initially resembled a cluster of thunderstorms with low level winds moving towards the convection from all directions. Apparently, the interactions of several atmospheric systems nearby imparted enough initial spin within Vamei's initial environment to allow it to survive.

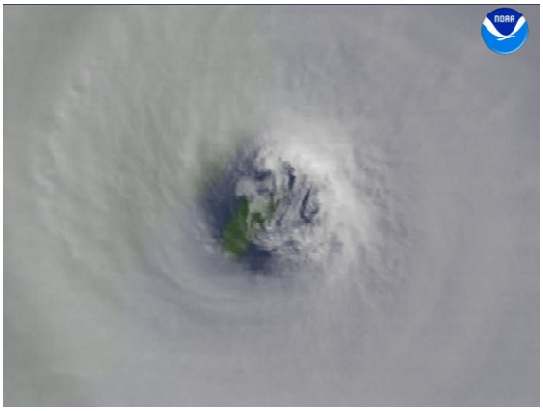
Tropical storm on the West Coast. Since 1900, only a couple of tropical systems have impacted the California coast. Cool waters and the geography of the western coast insure that most hurricanes weaken dramatically before reaching even the latitude of Tijuana. The only known example of a landfalling tropical storm occurred in 1939. It struck the Los Angeles area on September 25 with 50 mph winds. Unseasonably heavy rains undoubtedly contributed to the surprisingly heavy death toll of 45. Los Angeles received 5.60 inches of rain in just over one day. Mt. Wilson, located in the foothills north of the city, totaled over 11 inches of rain.

Most northerly Atlantic hurricane. In 1966, Hurricane Faith set a record for the most northerly Atlantic hurricane when it struck the Faroe Islands, located north of Scotland, with 100 mph winds on September 5. Faith was also one of the longest lasting tropical systems, spending more than 13 days as a hurricane. The image on the right shows the path of Faith. It started as a Cape Verde hurricane off the coast of western Africa and eventually curved to the northeast near Bermuda. After crossing the open Atlantic, Faith then passed between Scotland and Iceland still at hurricane strength. Faith later struck the northern Norwegian coast with 60 mph winds, after transitioning into an extratropical cyclone.

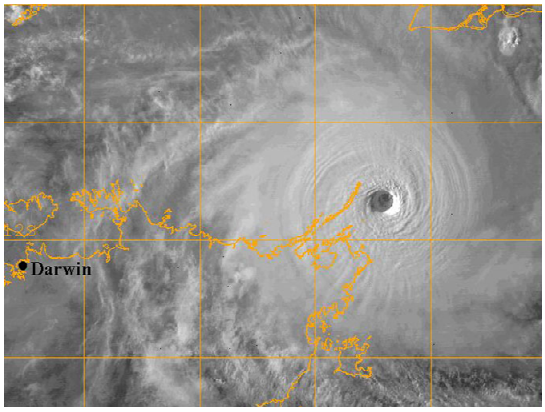
IN 1966 HURRICANE FAITH BROUGHT 100 MPH WINDS TO THE FAROE ISLANDS, NORTH OF SCOTLAND!

...see "Nine Notable Hurricanes" on page twelve

...Nine Notable Hurricanes, *continued from page eleven*



Strongest Atlantic Hurricane. Hurricane Wilma, crossing the Yucatan peninsula in 2005, holds the record for the lowest barometric pressure ever recorded in the Atlantic Basin and the Western Hemisphere. Wilma formed on October 15 and deepened to 882 mb by October 18. Wilma at one point had an eye only 3 miles in diameter and sustained winds of 185 mph. This was the smallest eye ever observed in an Atlantic hurricane. Wilma passed right over Cozumel Island and later heavily damaged Cancun, Mexico. Wilma established the 24 hour Mexican rainfall record of 64 inches. To the left is a close-up image of Cozumel Island underneath the eye of Wilma.



Strongest Southern Hemisphere hurricane. Typhoon Monica, which hit the northern coast of Australia, had the strongest sustained wind speed. On April 23, 2006, wind speeds were estimated at 170 mph as the storm passed just north of the Queensland coast. The minimum pressure fell to 879 mb according to satellite estimates. One Australian senior forecaster called Monica "the best developed hurricane I have ever seen." The image to the left shows Monica at peak strength. The eye is well illuminated by the setting sun.

Deadliest Atlantic hurricane. Hurricane Mitch, which in October 1998 formed in the southern Caribbean Sea, became a Category 5 storm near Honduras. Mitch's torrential rains resulted in flooding that killed 9,000 to 11,000 people. One report estimated a rainfall total of 75 inches. The image on the left shows a deadly mudslide in Honduras caused by the storm. The only other Atlantic hurricanes that may have produced more fatalities were the Great Hurricane of 1780, which killed up to 22,000 across the Antilles and the Dominican Republic, and the Galveston Hurricane of 1900, which may have killed 8,000 to 12,000.

A Student Volunteer's Experience at NWS Louisville

By Stephanie Dunten
Student Volunteer

This past summer I was a Student Volunteer at the NWS office in Louisville. The experience I gained by volunteering for the NWS will never be forgotten. All of my coworkers became my friends and treated me like I belonged.

I accomplished many things while at the office. I redesigned large portions of the NWS Louisville website, including pages having to do with NOAA Weather Radio, lightning, and science and technology.

I also assisted with outreach activities, such as staffing the NWS booth at the Kentucky State Fair, attending a Lion's Club meeting in Berea, helping with spotter talks in Harrodsburg, and talking with kids at the UPS Kids' Day.

I am attending Valparaiso University with a meteorology major and minors in both mathematics and communication. I will be starting my junior year this fall. I chose Valparaiso because of the excellent meteorology staff, and its proximity to my home in Lafayette, Indiana.

Ever since I was little I knew I wanted to work in weather, though I was not aware of all the options that were available. Besides working on television or with the National Weather Service, there are also opportunities in the private sector. After my summer volunteer experience, I feel I'd like to continue my work with the NWS. I would really like to be able to come back to the Louisville office, since I enjoyed both working and living in Louisville.

I am extremely glad that I have put my foot in the door as a volunteer and hope to get accepted into the NWS's Student Career Experience Program. Should I become employed with the NWS, I'd like to work my way up to Senior Meteorologist and eventually Warning Coordination Meteorologist.

I am grateful to everyone who mentored me at NWS Louisville , and I will take the knowledge I gained from my experience wherever I go in the future.

> "I would really like to be able to come back to the Louisville office, since I enjoyed both working and living in Louisville."
>
> — Stephanie Dunten

NeWS

Stephanie Dunten created a lightning page for our website (http://www.crh.noaa.gov/lmk/?n=lightning_safety), and created a new Weather Radio webpage (http://www.crh.noaa.gov/lmk/?n=weather_radio-lmk).

Many Staff Changes

Tony Freeman was the first Information Technology Officer at NWS Louisville. Tony had an amazing mind for all things computer related, and was a well-respected member of our team.

Chris Smallcomb, as a senior meteorologist at NWS Louisville, had an incredible mind for the science of meteorology, and shared his expertise with the other forecasters in the office.

Toby TenHarmsel

Toby arrived in July as our new Information Technology Officer, replacing Tony Freeman who left for Tallahassee, Florida.

Toby grew up in Zeeland, Michigan, where weather ranging from severe thunderstorms to lake effect snow made quite an impression when Toby was young. Toby first joined the United States Air Force, and then found employment with the NWS at Dayton, OH. After transferring to South Bend, IN, Chattanooga, TN, Elko, NV, Northern Indiana, and Duluth, MN, Toby arrived here at Louisville. He looks forward to serving his customers, both within and outside of the office, promoting innovative IT solutions to improve the services we provide.

Jim Maczko

Jim, replacing senior forecaster Chris Smallcomb, was born and raised in Akron, Ohio. He received his B.S. and M.S. in Meteorology from Ohio University in Athens, Ohio. He became interested in meteorology after exchanging letters with a Cleveland television meteorologist as part of a science class assignment in fifth grade. Before coming to Louisville, Jim worked at the NWS office in Billings, MT, where he gained experience in mountain snowfall and fire weather forecasting. Jim is looking forward to facing the challenges of forecasting winter weather in the Ohio Valley. He moved to Derby City not only for the fascinating weather, but also to be closer to his family and favorite sports teams, the Cleveland Indians and Cleveland Browns.

NeWS

Journeyman Forecaster Ben Schott was promoted to Senior Meteorologist and went to the NWS Northern Indiana office. Ben left Louisville in mid August and his vacancy was filled by Andrea Lammers, who, coincidentally, hails from the NWS Northern Indiana office. You might recall from past newsletters that Andrea was our NWS Student Career Experience Program (SCEP) in 2005 and 2006 while attending Indiana University. Andrea started at Louisville in mid-September.

NeWS

Brian Wolfe, a junior at Purdue University, volunteered at NWS Louisville this summer. Brian created a new StormReady web page, worked to get Orange County, Indiana StormReady, and updated our dam break information.

Our New Warning Coordination Meteorologist

After our long-time Warning Coordination Meteorologist (WCM) Norm Reitmeyer retired on December 2, 2006, NWS Louisville was faced with the difficult task of finding someone to fulfill the WCM duties as expertly as Norm did.

Our search was over when Joe Sullivan was selected as the new WCM.

Joe arrived in Louisville in January and has been adjusting to life and weather in the Ohio Valley, a far cry from the slower pace (and lower humidity!) of the Continental Divide in Wyoming, where he had been since 2001.

A native of northern Iowa, Joe earned a B.S. in Meteorology from Iowa State University. He worked as a TV meteorologist in Waterloo, IA and Springfield, MO before joining the NWS in 1987. In addition to his present position in Louisville, Sullivan's NWS career has included tours of duty in Springfield, MO, Concordia, KS, Grand Island, NE, Des Moines, IA, Cheyenne, WY, Riverton, WY, and NWS Central Region Headquarters in Kansas City, MO.

Throughout his career, he has strived to improve the ability of the NWS to communicate weather knowledge to the public for the purpose of protecting lives and property. Among his contributions, Joe invented the "bullet format" warning style that is now the NWS standard for convective warnings. He was part of the NWS Radar Web Display Team that earned a Department of Commerce Silver Medal in 2001 for their efforts in making Doppler Radar data available on NWS Internet websites. In 2002, Joe received an Isaac Cline Award for designing a networking process that saved the NWS more than $100,000 per year in telecommunications expenses.

Outside the office, Joe's interests include hot air ballooning – the natural sport of micrometeorologists – and spending time with his wife and four children.

OUR NEW WARNING COORDINATION METEOROLOGIST IS JOE SULLIVAN.

Recipes

With cool weather right around the corner, our Administrative Assistant, Pam Lozier, thought she would share some quick and easy appetizers for football games, holiday parties, and visits with friends and family.

Check out the recipes on page 16, too!

F5 Chili con Queso

1 (4-oz) can Ortega green chilies

1 lb pasteurized cheese, cut up

1 (16-oz) can whole tomatoes, drained, and finely chopped

1 Tbl. dried minced onion

Heat in chafing dish. Serve with corn chips. Serves 12.

NWS

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Autumnal Equinox:
September 23, 2007
5:51 a.m. EDT
4:51 a.m. CDT

Winter Solstice:
December 22, 2007
1:08 a.m. EDT
12:08 a.m. CDT

CoCoRaHS is coming to Kentucky!

CoCoRaHS is a dense network of rain gauges, read by volunteer observers from across the nation. On November 1, 2007, Kentucky will begin participating in this valuable program. If you'd like to volunteer, please contact us at w-lmk.webmaster@noaa.gov for more information. You can also visit the website at http://www.cocorahs.org.

More recipes from our Administrative Assistant, Pam Lozier!

Party Cheese Ball

2 (8-oz) pkgs. cream cheese
2 cups (8-oz) shredded sharp Cheddar cheese
1 T. chopped pimento
1 T. chopped onion
1 T. chopped green pepper
2 tsp. Worcestershire sauce
1 tsp. lemon juice

Combine softened cheeses, mixing well until blended. Add remaining ingredients; mix well. Chill, shape into a ball, and roll in chopped pecans if desired.

Golden Punch

4 c. sugar
6 c. cold water
46 oz can unsweetened pineapple juice
12 oz can frozen lemonade
2 (12-oz) cans frozen orange juice

This is a concentrate, which can be frozen and is great for brunches. To make punch, add 1 quart 7-Up or ginger ale per quart of concentrate. Makes 80 servings, ½ cup each.